Claims

1. A nucleic acid molecule coding for a human ClCKb protein comprising a genetic alteration at amino acid position 481 compared to the wild type, as well as for corresponding segments thereof.

2. The nucleic acid molecule according to claim 1, wherein said genetic alteration is an amino acid exchange.

3. The nucleic acid molecule according to claim 2, wherein by said amino acid exchange a threonine molecule is changed for a serine molecule ($ClCKb^{T481S}$).

4. A nucleic acid molecule which binds to the nucleic acid molecule according to claim 1 under stringent conditions.

5. A nucleic acid molecule which binds to the nucleic acid molecule according to claim 4 under stringent conditions.

6. A (poly)peptide encoded by the nucleic acid molecule according to claim 1.

7. A (poly)peptide encoded by the nucleic acid molecule according to claim 2.

8. A (poly)peptide encoded by the nucleic acid molecule according to claim 3.

9. A method for diagnosing hypertension, and/or allergy, and/or hair loss, and/or liability for infection, of a human being, or a predisposition therefor, comprising the steps of:

(a) Providing a biological sample of said human being;

(b) Analyzing said biological sample for the presence of a nucleic acid molecule or/and a (poly)peptide, and

(c) correlation of positive findings to hypertension, and/or allergy, and/or hair loss, and or liability for infection, or a predisposition therefor,

wherein said nucleic acid molecule in step (b) is selected from the group consisting of: the nucleic acid molecule according to claim 1, 2, 3, and 4; and/or said (poly)peptide is selected from the group consisting of: the (poly)peptide according to claim 6, 7, and 8.

10. The method according to claim 9, wherein said analyzing for the presence of said nucleic acid molecule in step (b) is performed by means of PCR technology.

11. The method according to claim 10, wherein the PCR amplification products are analyzed by means of denaturing high pressure liquid chromatography (dHPLC).

12. A method for identifying substances modulating activity of a peptide derived from ClCKb protein that is geneticall-ly altered at amino acid position 481 compared to the wild type, comprising the steps of:

(a) contacting of said peptide to a test substance, under conditions allowing the binding of said test substance to said peptide, and

(b) determination, whether said test substance modulates the activity of said peptide.

13. The method according to claim 12, wherein said genetic alteration is an amino acid exchange.

14. The method according to claim 13, wherein by said amino acid exchange a threonine molecule is changed for a serine molecule ($ClCKb^{T481S}$).

15. The method according claim 12, wherein said determination in step (b) is performed via ion current measurements, preferably via chloride ion current measurements, across a biological cell membrane.

16. The method according to claim 15, wherein said ion current measurements are performed via patch clamp and/or voltage clamp technology.

17. The method according to claim 15, wherein in step (b) it is determined whether said test substance inhibits ion current across said biological cell membrane.

18. A substance for modulating activity of a peptide derived from ClCKb protein that is genetically altered at amino acid position 481 compared to the wild type, identified by means of the method according to claim 12.

19. A method for preparing a pharmaceutical composition, comprising the steps of:

(a) providing a substance modulating activity of a peptide derived from ClCKb protein that is genetically altered at amino acid position 481 compared to the wild type, and

(b) formulating said substance into a pharmaceutically acceptable carrier,

wherein step (a) is performed by means of the method according to claim 12.

20. The method according to claim 19, wherein said pharmaceutical composition is destined for treating hypertension, and/or allergy, and/or hair loss, and/or liability for infection, of a human being.

21. A pharmaceutical composition prepared by the method according to claim 19.

22. A method for treating a human being affected by hypertension, and/or allergy, and/or hair loss, and/or liability for infection, comprising the steps of:

(a) providing a genetic construct coding for an antisense-$ClCKb^{T481S}$ probe and/or for a $ClCKb^{T481S}$-RNAi, and

(b) introducing said construct into a human being by means of gene therapeutic methods.

23. The method according to claim 22, wherein said construct is selected from the group consisting of: naked DNA or cDNA, naked RNA or cRNA, plasmid DNA, plasmid RNA, vector RNA, non-virulent/non-pathogenic virus, and transformed bacteria.

24. A method for preparing a pharmaceutical composition for treatment of hypertension, and/or allergy, and/or hair loss, and or liability for infection, comprising the steps of:

(a) providing a genetic construct coding for antisense $ClCkb^{T481S}$, and/or $ClCkb^{T481S}$-RNAi, and

(b) formulating said construct into a pharmaceutically acceptable carrier.

25. A pharmaceutical composition prepared by the method according to claim 24.

26. A pharmaceutical composition comprising a genetic construct coding for antisense $ClCKb^{T481S}$, and for $ClCKb^{T481S}$-RNAi, and a pharmaceutically acceptable carrier.